

STUDIES IN THE PYRRHOPYGINÆ, WITH DESCRIPTIONS OF NEW SPECIES (LEPIDOPTERA,
RHOPALOCERA, HESPERIIDÆ)

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This paper contains the results of the study of several more genera in this subfamily of the *Hesperiidæ*, and is a continuation of that published in the JOURNAL OF THE NEW YORK ENTOMOLOGICAL SOCIETY, vol. xxxix, (3), pages 417 to 491, 1931.

A radical departure is made in the treatment of the genera *Mysoria* Watson and *Amenis* Watson, from that of Mabille and Boulet in their paper and Draudt in Seitz Macrolepidoptera of the World. Godman and Salvin, Biologia Centrali-Americana, Rhop. vol. 2, pp. 253, 254, 1893, are followed in the characters they use for the separation of the two genera: in *Mysoria* the absence of a dorsal row of hairs on the hind tibiæ, the second median branch of the secondaries rising at or about the end of the cell; in *Amenis* the hind tibiæ having a dorsal row of hairs, the second median branch of the secondaries rising at the end of the cell. As stated in the first part of this paper, Godman and Salvin are followed in placing *galgala* Hewitson in the genus *Mysoria* where it seems better allied than in the genus *Pyrrhopyge*. In the *pallens* Mabille (*acastus* Cramer) group the discocellulars of the hind wings are sometimes rather indistinct and vary in appearance, seeming in some cases to be nearly straight and in others to be curved in varying degrees, occasionally varying in appearance in the two wings of the same insect. This variation produces the effect of making the second median branch seem to arise from beyond the cell in some cases and at the end of the cell in others. In this group these differences in appearance in the rise of the second median branch are unaccompanied by any other character of maculation, other than normal individual variation, or in the form of the genitalia and it can only be concluded that they have no value whatever for the separation of some of the forms into distinct species.

In the genus *Yanguna* we have left *parima* Plotz where it is placed by both Mabille and Boulet and Draudt, in Seitz Macrolepidoptera of the World, although it does not appear to be congeneric with the type, differing considerably in superficial appearance and form of the genitalia. Although no specimens of *assaricus* Cramer have been available for examination, we believe that this species is more nearly allied to *Myscelus* than to this genus. Mabille and Boulet also place *crida* Hewitson in the genus *Mahotis*, probably following the action of Watson, in this paper we follow Godman and Salvin in including it in *Yanguna*, where it very closely agrees with several of the other species in superficial appearance; however, in the form of the genitalia *crida* is more closely allied to the typical group of the genus *Pyrrhopyge* (Group A of the previous paper) than to this genus.

The study of the genus *Jemadia* presents considerable difficulty in satisfactorily determining some of the species from the published descriptions, the pattern of the maculation being so extremely similar in some species that they cannot be accurately separated when the actual specimens are before one, to try to separate them according to the printed descriptions is hopeless. The writer has in certain cases followed the determination of other authors and an examination of the genitalia of the type specimen may later prove that the identifications so based in this paper may be incorrect. The fact that some of the species are based on female types, sometimes from an unknown locality, further increases the difficulty of the study of the genus. As Draudt, in Seitz Macrolepidoptera of the World, has figured many of the species and as the figures are for the most part quite good, a detailed description of the bands and spots of the various species is not given in this paper, except in certain cases, as to do so would probably be of no aid in identification. Any one seriously concerned with the proper identification of doubtful material will find it quite necessary to examine the genitalia, which exhibit excellent characters for accurate separation of the species. The division of the genus into two parts, the "*punctati*" and the "*lineati*," is used in this paper, following Mabille and Boulet, the former including those species which have white dots and the latter those which have a white line on the shoulder-

covers (usually referred to as the "collar"). The writer, however, is unable to take the view of Mabille and Boulet that the under side of the secondaries is blue with black bands, when the reverse condition is obvious, but in any event the similarity of the bands in many species and the variation among individuals of the same species, renders their value for conclusive specific separation extremely doubtful, whether one considers them blue or black.

Erycides licinus Moschler, Verh. k.-k. zool.-bot. Ges. Wien, vol. xxviii, p. 209, 1878, and *Pyrrhopyga dysoni* Plotz, Stett. Ent. Zeit., vol. xl, p. 521, 1879, described from specimens combining the body and wings of a *Phocides* and the head of a *Jemadia* are synonyms of *Phocides distans* Herrich-Schaffer, *Jemadia licinus* Godman and Salvin, Biol. Centr.-Amer., Rhopal., vol. 2, p. 265, 1893; p. 731, (Supplement), 1901, is a synonym of *Phocides pigmalion* Cramer.

In *Jemadia* vein 5 of the secondaries is either absent or very weakly indicated, but in this paper the references to the veins of these wings are made as though vein 5 were normal, that is, veins 6, 7, and 8 are referred to exactly the same as though vein 5 was present.

In this paper, and any others published by the author, the same terms will be used in referring to the anterior parts of the thorax and to the genitalia, as were used, and illustrated, in the previous paper on the *Pyrrhopyginæ*.

Again the writer must express his thanks to his various friends for their very valuable assistance. Capt. Riley, of the British Museum, and Professor Hering, of the Zoologisches Museum, Berlin, have both been exceedingly kind in furnishing important details of types.

Despite careful efforts to prevent them, certain typographical errors occurred in the first part of this paper, JOURNAL N. Y. ENT. SOC., vol. xxxix, (3), 1931, the correction of which is given below:

page 444, read "*P. phæax*," not "*pheax*."

page 445, read "*P. rubricor*," not "*rubricolor*."

page 459, under *P. semidentata*, fifth line, read "*intersected fringes*," not "*interested fringes*."

page 461, under *P. hygieia*, the Draudt reference mentioned is Draudt, Seitz Macrolepidoptera of the World, vol. 5, p. 839, pl. 162 f, 1921."

page 461, under *P. phæbus*, third line, read "*hygieia*," not "*hyfieia*."

Mysoria

Watson, Proc. Zool. Soc. London, (1), p. 12, 1893.

Orthotype, *Papilio acastus* Cramer, (*pallens* Mabilie). Genitalia. The uncus is rather stout at the base, diminishing rapidly to the apex, which is bifid, terminating in two short arms which have a small tooth-like projection on their inner edge, (absent in *galgala* and *thasus*, which also have a longer and more slender termination). The girdle and saccus are of moderate length. The claspers are rather short and stout, the termination variable as illustrated in the accompanying figures. The ædæagus is short and a little bent toward the base. On each side of the uncus at the base rises a slender flange, variable in shape among the species.

M. *pallens* (Fig. 1).

Mabilie, Ann. Soc. Ent. Belg., vol. xxxv, (C. R., ser. iv), p. cix, 1891.

Mabilie and Boullet, Ann. des Sciences Nat., Paris, 9th ser., pp. 185, 186, 1908.

Draudt, Seitz Macrolep. of the World, vol. 5, p. 841, 1921.

acastus Cramer, Pap. Exot., vol. 1, p. 65, pl. 41, figs. C, D, 1779, (not vol. 3, pp. 12, 13, pl. 199, fig. E, 1782).

Godman and Salvin, Biol. Cent.-Amer., Rhop., vol. 2, p. 254, 1893, (under *venezuela* and the notes).

It is unfortunate that Cramer's *Papilio acastus* is a homonym of the much earlier *Papilio acastus* of Linnæus (*Systema Naturæ*, 10th ed., (1), p. 487, 1758). As *pallens* Mabilie seems to be conspecific with *acastus* that name may be substituted.

According to Cramer's description and figure *acastus* is apparently the insect with a yellow outer marginal band and complete

absence of a red costal marginal stripe on the secondaries beneath. The insect having a red outer marginal band and a red costal marginal stripe on the secondaries beneath, which Cramer later described as a variety of *acastus*, is *barcastus* Sepp.

Mabille apparently considered the red banded insect to represent *acastus* and redescribed the yellow banded form lacking the red costal marginal stripe as *pallens*, as there are no characters in his description to separate *pallens* from *acastus*.

Pallens appears to be a variable species, in size of individuals, in the extent and depth of the metallic sheen of the upper side and in the extent and shade of the outer marginal band and costal marginal stripe of the under side of the secondaries. The name must be restricted to those individuals lacking the red costal marginal stripe.

The flanges from the base of the uncus are very long and slender, from their base they extend forward then curve upward above the uncus and then curve forward again, they are somewhat flattened toward their apex. The claspers terminate in an upturned, sharp pointed hook, with serrations before and after it, back of this hook is another very strong tooth-like projection pointing somewhat backward. The serrations on both sides of the terminal hook vary in size and number and the hook itself varies in length.

Distribution. Type locality: Brazil. *Acastus*, "les Berbices" and "a Surinam."

M. *pallens* form *venezuelæ*.

Scudder, Rept. Peabody Academy of Sciences for 1871, p. 67, 1872.

Godman and Salvin, Biol. Cent.-Amer., Rhop., vol. 2, pp. 254, 255; vol. 3, pl. 73, fig. 17, (genitalia), 1893.

Mabille and Boulet, Ann. des Sciences Nat., Paris, 9th series, pp. 185, 186, 1908.

Draudt, Seitz Macrolep. of the World, vol. 5, p. 841, pl. 162 h, 1921.

ambigua Mabille and Boulet, Ann. des Sciences Nat., Paris, 9th series, pp. 183, 184, 1908. (*Amenis*).

Draudt, Seitz Macrolep. of the World, vol. 5, p. 841, (*Amenis*), 1921.

Venezuelæ differs from *pallens* only in having a red costal marginal stripe on the secondaries beneath, which may be complete or reduced. The form of the male genitalia does not differ in the two. There is considerable variation in the width of the outer marginal yellow band on the under side of the secondaries, a fact which has been noted by Godman and Salvin. Mabille and Boulet distinguish *ambigua* from *venezuelæ* by the rise of the second median vein being at the cell end, all of the other characters being the same, yet at the same time they find this same apparent difference in individuals of the insect they describe as *proxima* and consider it only as combining the characters of the two genera *Mysoria* and *Amenis*. As stated previously in this paper the seeming difference in the rise of the second median branch is more apparent than real and there is no other difference in maculation or form of the genitalia.

Distribution. Type locality: Venezuela (for *venezuelæ*). Not given for *ambigua*. Northern Mexico to south Brazil and Paraguay.

According to strict priority *venezuelæ* should take the name of the species, and *pallens* that of the form.

M. proxima.

Mabille and Boulet, Ann. des Sciences Nat., Paris, 9th series, pp. 183, 184, 1908. (*Amenis*).

Draudt, Seitz Macrolep. of the World, vol. 5, p. 841, 1921. (*Amenis*).

The description does not seem to give any character that will serve to separate *proxima* from *venezuelæ* other than the outer marginal yellow band of the under side of the secondaries narrows to a point "as far as nervure 2." In all of the large number of specimens of *venezuelæ* examined this yellow band goes beyond nervure 2, sometimes very little and sometimes narrowly along the margin of the wing to the anal angle. *Proxima* may be a form of *pallens*, but as there are no specimens at hand which agree with the description the question cannot be decided here.

Distribution. Type locality: Mabille and Boulet mention Mexico, Costa Rica, Colombia, Paraguay.

M. decolor.

Mabille and Boulet, Ann. des Sciences Nat., Paris, 9th series, pp. 185, 186, 1908.

Draudt, Seitz Macrolep. of the World, vol. 5, p. 841, 1921.

The description states that the red costal marginal stripe of the under side of the secondaries is incomplete, ending in the middle of the border, and that the marginal band is sordid-white strewn with small black scales.

Distribution. Type locality: "Costa Rica, Panama."

M. caucana.

Rober, Ent. Mitteil., vol. 14, p. 162, 1925.

The description states that *caucana* is very similar to *venezuelæ*, somewhat larger, little metallic sheen on the wing base, fringes of the fore wings at the anal angle and of the hind wings from the upper radial down, yellowish, prominently so beneath, the anal tuft brownish-red, the yellow marginal band of the secondaries beneath broader and longer, the red costal stripe narrower and of equal breadth.

Distribution. Type locality: West Colombia, Cauca Valley.

M. barcastus.

Sepp, Surinam Vlind, vol. 3, pl. 138, 1855.

Plotz, Stett. Ent. Zeit., vol. xl, p. 535, 1879.

Godman and Salvin, Biol. Cent.-Amer., Rhop., vol. 2, p. 254 (notes), 1893.

Mabille and Boulet, Ann. des Sciences Nat., Paris, 9th series, pp. 185 (as *verbena* Butler), 186 (as synonym of *acastus* Cramer), 1908.

Draudt, Seitz Macrolep. of the World, vol. 5, p. 841, 1921.

acastus Cramer (female), Pap. Exot., vol. 3, pp. 12, 13, pl. 199, fig. E, 1782.

phidias Fabricius, Mant. Ins., p. 90, 1787.

verbena Butler, Ent. Mon. Mag., vol. 5, p. 272, 1869.

In *barcastus* the outer marginal band of the under side of the secondaries is red instead of yellow, and the red costal marginal

stripe is present. The fringes of the primaries are white or partly so from the anal angle to vein 2 or 3, from there to the apex brownish; of the secondaries white. *Barcastus* has a slightly different appearance from *pallens*, but as the form of the genitalia is identically the same in both they are probably not really specifically distinct.

Distribution. Type locality: Surinam. Surinam; French Guiana. (B).

M. barcastus form cayenne.

Mabille and Boullet, Ann. des Sciences Nat., Paris, 9th series, pp. 185, 186, 1908.

Draudt, Seitz Macrolep. of the World, vol. 5, p. 841, 1921.

According to the description *cayenne* differs from *barcastus* (*verbena* Butler) in having the outer marginal band of the under side of the secondaries bright yellow instead of red. The specimens at hand are from the island of Trinidad, B. W. I., and they differ slightly from the description in that the red costal marginal stripe of the under side of the secondaries is reduced, consisting of a short basal streak and when continued to the outer angle composed only of scattered red scales. The fringes of the primaries are entirely black or with a few white scales between veins 1 and 3; of the secondaries white only in the anal half of the wing.

The form of the male genitalia does not differ from that of *barcastus* and therefore not from that of *pallens*.

Distribution. Type locality: "Honduras, Amazone, Guayane Franc." Trinidad. (A.M.), (B).

M. affinis (Fig. 2).

Herrieh-Schaffer, Corresp.-blatt., Regensb., vol. xxiii, p. 165, 1869. (Prodr. Syst. Lep., part 3, p. 57, 1869).

Godman and Salvin, Biol. Cent.-Amer., Rhop., vol. 2, p. 255; vol. 3, pl. 73, figs. 19, 20, 21, 1893.

Mabille and Boullet, Ann. des Sciences Nat., Paris, 9th series, p. 184, 1908. (*Amenis*).

Draudt, Seitz Macrolep. of the World, vol. 5, p. 841, pl. 162 h, 1921. (*Amenis*).

On the upper side of this species the wings are black with a greenish sheen to the primaries and according to the light, greenish or bluish to the secondaries. Beneath, the apical half of the primaries as well as the costal area is greenish, the rest bluish; the secondaries are bluish along the abdominal fold, the rest greenish, with a narrow yellow marginal stripe extending from near the base on the costal margin around the margin of the wing almost to the anal angle. The primaries beneath sometimes have a small accumulation of yellow scales on the costal margin at the base. The fringes are entirely white. Head black with a bluish sheen. Collar red. Shoulder-covers and tegulæ blue-black. Palpi red with the tip bluish. Red below and around the eyes. Pectus black. Anal tuft red. A yellow lateral line extending the entire length of the body on both sides.

The claspers terminate in a short upturned arm with a rather broad, slanting, serrated tip. The projecting flanges from the base of the uncus are slender, extending a little forward at the base, then curving upward to a little above the uncus and are somewhat broadened at the tip.

Distribution. Type locality: not given. Mexico (G. & S.); (A. M.); (B).

M. amra (Fig. 3).

Hewitson, Exot. Butt., vol. 4, Pyrrh. pl. 3, figs. 16, 17, 1871.

Godman and Salvin, Biol. Cent.-Amer., Rhop., vol. 2, pp. 255, 256; vol. 3, pl. 73, fig. 18 (genitalia), 1893.

Mabille and Boulet, Ann. des Sciences Nat., Paris, 9th series, p. 184, 1908. (*Amenis*).

Draudt, Seitz Macrolep. of the World, vol. 5, p. 841, pl. 166 c, 1921. (*Amenis*).

brasiliensis Mabille, Genera Insect., Hesp., p. 10, 1903.

Amra differs from *affinis* in having the collar black with a blue sheen, instead of red, in the lateral stripe of the body being red instead of yellow and in the broader outer marginal band of the under side of the secondaries. In the specimens at hand there appears to be less sheen to the wings than in *affinis*.

Mabille and Boulet place *brasiliensis* as a synonym, of *amra*, with which Mabille's description appears to agree, however, it seems rather strange that a large and conspicuous insect like this one has not turned up in the intervening country between Hewitson's type locality, Mexico, and Mabille's type locality, Brazil, except in Guatemala, which is the neighboring country to Mexico, it may be possible that the type locality given for *brasiliensis* is incorrect, or it may be more or less rare in its southern range.

The flanges from the base of the uncus are short, extending forward from the base and then curving upward. The claspers terminate in a short, narrow, slightly upturned arm, serrate at the tip, behind which is a serrate undulation.

Distribution. Type locality: Mexico. Mexico, Guatemala (G. & S.). Mexico (A. M.); (B).

M. thasus (Fig. 4).

Cramer, Pap. Exot., vol. 4, pp. 179, 180, pl. 380, figs. M, N, 1782.

Mabille and Boulet, Ann. des Sciences Nat., Paris, 9th series, pp. 185, 186, 1908.

Draudt, Seitz Macrolep. of the World, vol. 5, p. 841, pl. 162 h, 1921.

Upper side black with a green or greenish-blue reflection or dark olive-brown, the veins showing somewhat darker. Beneath, the primaries have the basal and inner-marginal areas brownish to bluish-black, the apical half and the secondaries are of variable shades of brown, the veins showing a little darker than above. Head black, with a red dot (which may be absent) in the center behind the antennæ, another larger red spot in the center of the black collar. Shoulder-covers black. Tegulæ black with a small yellow dot at the base. Palpi black. A red spot below and a yellow spot behind the eyes. Anal tuft red. On each side of the body a prominent yellow spot at the base of the primaries, one at the base of the secondaries and one at the base of the abdomen. The ventral surface of the abdomen has from five to six red spots on each side, and in some individuals there is a second parallel line of smaller red spots just above them, which may be of an equal number or less. Pectus black. Fringe of primaries white,

in variable extent, from anal angle up, sprinkled with black scales towards the apex, which is entirely black; of the secondaries white, sometimes sprinkled with dark scales especially toward the outer angle.

The claspers terminate in a short, upcurved arm, serrate at the tip, back of which is a stout, tooth-like, serrate projection. The flanges at the base of the uncus are long, extending upward and a little forward from their rise, then curving forward and reaching nearly to the apex of the uncus.

Distribution. Type locality: Surinam. Bogota, Colombia; Ecuador; Santa Cruz, Bolivia; Obidos, Brazil. (B).

M. *thasus* form *sejanus*.

Hopffer, Stett. Ent. Zeit., vol. 35, p. 369, 1874.

Mabille and Boullet, Ann. des Sciences Nat., Paris, 9th series, pp. 185, 186, 1908.

Draudt, Seitz, Macrolep. of the World, vol. 5, p. 841, pl. 162 g, 1921.

Sejanus differs from *thasus* in the lack of the red spots of the collar, the head and below the eyes. The form of the male genitalia is identically the same in both forms.

Distribution. Type locality: The exact locality is not mentioned, but the description is in a paper entitled "New Lepidoptera from Peru and Bolivia." Ecuador. (B).

M. *erythro stigma*.

Rober, Ent. Mitteil., vol. 14, p. 87, 1925.

The description states that this insect differs from *thasus* in the somewhat larger size, in the lack of the red spot of the collar, paler in color of the upper side with more prominent veins, beneath yellowish-grey.

As *thasus* appears to be variable in color, and in the tendency for the red spots to disappear, it may be possible that *erythro stigma* is merely one of the forms of that species.

Distribution. Type locality: "Bolivia (Rio Songo, 750 m, A. H. Fassl.)."

M. galgala (Fig. 5).

Hewitson, Trans. Ent. Soc. London, 3rd series, vol. 2, p. 483, 1866.

Godman and Salvin, Biol. Centr.-Amer., Rhopal., vol. 2, pp. 253, 256, 257; vol. 3, pl. 73, fig. 22 (genitalia), 1893.

Mabille and Boulet, Ann. des Sciences Nat., Paris, 9th series, pp. 175, 181, 1908.

Draudt, Seitz Macrolep. of the World, vol. 5, p. 838, pl. 162 d, 1921.

strigifera Felder, Reise Nov., Lep., vol. 2, p. 505; pl. 70, figs. 7, 8, 1867.

Plotz, Stett. Ent. Zeit., vol. xl, p. 531, 1879.

Wings blackish with a green reflection, primaries with a narrow, irregular, orange, transverse band from about the center of the costa to the outer three-fourths of vein 1. Beneath the color is about the same as above, the orange band of the primaries much heavier at the costal margin, rapidly diminishing and ending indistinctly on vein 2; the secondaries also with a narrow, slightly bent, orange band from the costal margin almost to vein 1. Fringes white. Shoulder-covers and tegulae blackish. Head blackish with a red spot below each antenna. Collar reddish. Palpi bluish-black at the tip, beneath intermixed with reddish. Pectus blackish. Abdomen with six red spots on each side of the ventral surface and four red spots in the center of the dorsal surface. Anal tuft red. Godman and Salvin say that the transverse band of the primaries is variable in width without reference to the locality from which specimens come.

The claspers terminate in a short, rounded, deeply serrate arm, in the center of the disc there is a strong projection which is notched at the tip. The termination of the uncus, and the flanges arising from the base, are long and slender.

Distribution. Type locality: Venezuela. Panama; Colombia; Venezuela. (G&S).

Amenis

Watson, Proc. Zool. Soc., London, (1), p. 12, 1893.

Orthotype, *Pyrrhopyga pionia* Hewitson.

Genitalia. In the one species available for examination the form of the male genitalia differs from that of *Mysoria*, as noted by Godman and Salvin, in the *Biologia*, resembling that of some of the species of *Pyrrhopyge* in the shape of the flanges arising from the base of the uncus, the termination of the claspers and the long upward projection from their dorsal edge at the base of the terminal arm. The uncus terminates in two bluntly pointed arms. The saccus is rather long. The ædœagus is slender, tapering gradually from the base to the apex.

A. pionia (Fig. 6).

Hewitson, *Exot. Butt.*, vol. 2, *Pyrrh.* pl. 2, fig. 9, 1857.

Godman and Salvin, *Biol. Centr.-Amer.*, *Rhopal.*, vol. 3, pl. 73, fig. 25, (genitalia), 1893.

Mabille and Boulet, *Ann. des Sciences Nat.*, Paris, 9th series, pp. 183, 184, 1908.

Draudt, *Seitz Macrolep. of the World*, vol. 5, p. 841, pl. 162 h, 1921.

There is some variation in the extent of the green overscaling of the primaries, and in the bluish spot of the under side of the primaries in the angle of the rise of vein 2, this is prominently shown in some individuals, in others but faintly indicated or entirely lacking. As noted by Hewitson the lower one of the two crimson spots of the upper side of the primaries is represented on the under side by a whitish spot which is sometimes absent. The fringes of both wings are white.

There is some asymmetry in the termination of the claspers, which also vary individually in the extent of the development of the termination.

Distribution. Type locality: "New Granada." Caracas, Venezuela; Viota, Colombia. (A.M.). Colombia. (B).

A. baroni.

Godman and Salvin, *Ann. and Mag. Nat. Hist.*, series 6, vol. xv, p. 372, 1895.

Mabille and Boulet, *Ann. des Sciences Nat.*, Paris, 9th series, p. 203, 1908 (as "*Mimoniades baroni* Salvin").

Draudt, Seitz Macrolep. of the World, vol. 5, p. 847, 1921 (as *Mimoniades baroni* Mabilbe and Boulet).

The description states that the costa of the primaries is slightly curved; the outer margin convex. Anal angle of secondaries slightly produced. Primaries golden-olive, outer and inner margins broadly black, a transverse series of three black-bordered red spots, the largest in the cell, the others below toward the inner margin; four orange-red spots beyond the cell, in a black border, two more in the disc. Secondaries black with two irregular olive bands, one submarginal, the other through the cell, the two meeting near the anal angle. Fringes of both wings buff. Under side of primaries as above, the lowest spot of the transverse band orange-buff, a large black patch inside the band. Secondaries greenish-buff, outer and inner margins, two narrow, irregular lines across the disc, a wider one through the cell and one near the base, black. Head above black, with two longitudinal light bands on either side. Abdomen black above banded with olive, the extremity buff. Palpi beneath, thorax, abdominal bands, hind surface of coxæ and dorsal fringe of hind tibiæ, orange-buff; the rest of the legs, and antennæ, black. The form of the male genitalia is similar to that of *pionia* Hewitson but differs in several details of structure.

Female similar to the male, with larger and more rounded wings.

Distribution. Type locality: Cajamarca, Peru.

A. similis.

Rober, Ent. Mitteil, vol. 14, pp. 86, 87, 1925.

The description states that this species differs from *pionia* Hewitson in the wings being shorter, the fringes narrower, those of the forewings darker, the red spots of the upper side of the primaries larger, the lower one semi-circular, the upper one circular, on the under side the lower spot is yellow; the submarginal bluish band of the secondaries narrower and longer, the bluish-green scaling of the upper side reduced, beneath extended; shoulder-covers inwardly red, outwardly yellowish bordered. The rest similar to *pionia*.

Distribution: Type locality: Venezuela.

A. ponina.

Herrich-Schaffer, Corresp.-blat. Regensb., vol. xxiii, p. 165, 1869; (Prodr. Syst. Lep., part 3, p. 57, 1869).

Godman and Salvin, Biol. Centr.-Amer., Rhopal., vol. 2, pp. 257, 258; vol. 3, pl. 73, figs. 23, 24, 1893.

Mabille and Boulet, Ann. des Sciences Nat., Paris, 9th series, pp. 183, 184, 1908.

Draudt, Seitz Macrolep. of the World, vol. 5, p. 841, 1921.

The only specimen at hand is a female and it differs from specimens of *pionia* Hewitson before the writer in the fringes of both primaries and secondaries being entirely orange-yellow, and in having a very fine orange-yellow line on each side of the center of the thorax on the upper side, and in lacking the green submarginal spots near the anal angle of the secondaries. The original description of *ponina* states that the fringes are golden-yellow, white toward the apex of the primaries, but as mentioned above in this female specimen they are entirely orange-yellow.

Distribution. Type locality: not given. Panama; Venezuela (G. & S.). Panama (B.).

Yanguna.

Watson, Proc. Zool. Soc. London, (1), pp. 12, 13, 1893.

Orthotype, *Pyrrhopyga spatiosa* Hewitson.

Genitalia. The apex of the uncus is cleft and rather blunt. A flange varying in shape arises at the base of the uncus on each side, in most of the species (absent in *rubricollis* and *parima*). The girdle and saccus are moderately long. The ædœagus is swelled and bent at the base and tapers toward the apex. The scaphium is more or less developed in some species. The claspers are stout and usually long, more or less serrate on the outer and dorsal edges, usually with one or two stout upward projections from the dorsal edge. In some species the right and left claspers are asymmetrical. The inner plate of the disc is often serrate on its dorsal edge and sometimes carries serrated projections. The genitalia of *parima* Plotz differs considerably from the other members of the genus and that species probably does not belong here.

I. Head black with white spots and lines.

a. Pectus black, narrowly edged with white.

Y. *spatiosa* (Fig. 7).

Hewitson, Equat. Lep., p. 69, 1870. Exot. Butt., vol. 4, Pyrrh. pl. 2, fig. 15, 1871.

Staudinger, Exot. Schmett., vol. I, pl. 99, 1888.

Mabille and Boulet, Ann. des Sciences Nat., Paris, 9th series, pp. 186, 187, 1908.

Draudt, Seitz Macrolep. of the World, vol. 5, p. 843, pl. 164 b, (as *speciosa*), 1921.

Hewitson's description states that there are three minute white spots near the subapical series, and the figure shows another one on the costal margin and two between the subapical spots and the spots between veins 3 and 5; in the specimens at hand the last two mentioned, between those of veins 3 and 5 and the subapical spots, are absent. This probably represents a variable character.

The claspers are symmetrical and terminate in a triangular lobe, serrate on the outer and inner edges, back of this arising from the dorsal edge is a stout smooth projection; the inner plate of the disc is irregular and serrate on the dorsal edge.

Distribution. Type locality: Ecuador. Ecuador (A.M.), (B.).

Y. *mabillei*.

Druce, Ann. and Mag. Nat. Hist., vol. 3, p. 438, 1909.

The description states that the primaries are blue-black with a pure white transverse band, beginning broadly just below the subcostal nervure and extending to the submedian nervure, where it terminates pointedly. Base of wings broadly bright red. Fringes reddish-brown. Secondaries with basal and discal areas bright red, the rest blue-black, extreme basal area thickly clothed with deep black hair. Fringes reddish-brown. Beneath, primaries blue-black, the white band repeated, a slight reddish irroration at the base; secondaries blue-black, a clearly defined bright red fascia from costal margin near the base to the middle of the wing. Fringes of both wings as above. Head black with two white spots between the eyes. Collar grey. Thorax bright

red interspersed with black hairs. Abdomen black annulated with bluish-grey. Anal tuft reddish-brown. Palpi black with some grey scales. Legs black, fringed with grey. Antennæ black.

In his remarks on this species, Druce states that it is somewhat like *cometes* Cramer but seems to be allied to *aspilos* Mabilie and Boulet from which it differs in the broad white transverse band of the primaries and the more extensive red on the hindwing beneath. He described the species from two specimens, one of which has the fringe of the hindwings more nearly concolorous with the border of the wing and which may be the usual coloring.

Distribution. Type locality: Huancabamba, East Peru, 6,000 to 10,000 feet.

b. Pectus white or narrowly edged with black.

Y. cosyra (Fig. 8).

Druce, Cist. Ent., p. 363, 1875.

Godman and Salvin, Biol. Centr.-Amer., Rhopal., vol. 2, p. 258; vol. 3, pl. 74, figs. 1, 2, 1893.

Mabilie and Boulet, Ann. des Sciences Nat., Paris, 9th series, pp. 186, 187, 1908.

Draudt, Seitz Macrolep. of the World, vol. 5, p. 842, pl. 164, b, 1921.

This species somewhat resembles *spatiosa* but differs in the more orange-red color of the basal area of the wings and body, which are deeper red in *spatiosa*; in the whiter palpi and the more metallic sheen to the wings. The two species also seem to have a different habitat.

The claspers terminate in an irregular, subtriangular lobe, serrate on the outer and inner edges; back of this, in the right clasper, there rises a stout upward projection from the dorsal edge, in the left clasper there are two of these projections, with some serrations. The inner plate of the disc is irregular and somewhat serrate on the dorsal edge.

The remarks in the Biologia on page 258 in regard to the genitalia of *cosyra* are transposed and in reality apply to *Yanguna crida* Hewitson, while the remarks under *crida*, on the following page, refer to *cosyra*.

Distribution. Type locality: "Bugaba, Veragua," Chiriqui, Panama; Colombia. (B).

Y. aspitha.

Hewitson, Trans. Ent. Soc. London, 3rd series, vol. 2, p. 481, 1866. Exot. Butt., vol. 4, Pyrrh. pl. I, fig. 5, 1869.

Mabille and Boulet, Ann. des Sciences Nat., Paris, 9th series, p. 187, 1908.

Draudt, Seitz Macrolep. of the World, vol. 5, p. 842, pl. 164 c, 1921.

The description states that the male is dark brown above. The body and a transverse band near the base of the primaries, a broader one on the secondaries, are rufous-yellow. A trifid, triangular band of white hyaline spots in the center of the primaries. Outer margin of the secondaries dentate, fringes white. Abdomen banded with white.

The female differs in the darker rufous color and in having a minute white spot or two on the costal margin near the apex.

The figure in Exotic Butterflies shows a distinct tooth or lobe at the anal angle of the secondaries.

Distribution. Type locality: "Amazon, Para and St. Paulo."

Y. rufescens.

Riley, The Entomologist, vol. 52, p. 201, 1919.

The description states that the head is brown with a narrow white collar. Palpi white. Patagia, probably whole of thorax and part of the abdomen with long brick-red hairs. Tip of abdomen brown, internally white. Front coxæ densely clothed with long creamy hairs.

Wings above and below dark brown with a greenish-blue reflection. A narrow transverse band near the base of the forewing and a large sub-basal area on the hind wing the same color as the patagia. Fore wings with a broad white semi-transparent central band of three spots, the upper two oblong, the lowest triangular, situated in the cell and interspaces 2 and 1. On the under side this band is continued into interspaces 11 and 12 and in the latter is considerably extended basally and distally. Fringes of the fore wing apically brown, becoming white towards tornus. Hindwing below with a sub-basal red-brown area. Fringes white, brick-red at the anal angle, then brown towards

inner margin. Differs from *aspitha* in the brick-red thorax, the color of the fringes and the duller appearance.

Distribution. Type locality: Abuna, Upper Madeira.

Y. aspiilos.

Mabille and Boulet, Ann. des Sciences Nat., Paris, 9th series, p. 186, pl. 13, fig. 2, 1908.

Draudt, Seitz Macrolep. of the World, vol. 5, p. 842, pl. 164 b, 1921.

The description states that the wings are dark blue with a bright blue reflection. No hyaline spots. At the base of the primaries two long fulvous-red spots; at the base of the secondaries two spots of the same color, the upper one the longer, passing the cell and bent at its anterior border. Secondaries strongly concave between veins 2 and 3.

Distribution. Type locality: none given.

Y. staudingeri (Fig. 9).

Plotz, Stett. Ent. Zeit., vol. xl, p. 530, 1879.

Mabille and Boulet, Ann. des Sciences Nat., Paris, 9th series, pp. 186, 187, 1908.

Draudt, Seitz Macrolep. of the World, vol. 5, p. 842, pl. 164 b, 1921.

The specimens at hand have a brilliant sheen. The primaries have a transverse band of three white hyaline spots, from the upper edge of the cell to midway between veins 1 and 2, the lowest spot ending in a point a little beyond the center of the interspace; three subapical spots, very small in one specimen. Base of primaries and base of secondaries from the cell to the abdominal fold, red, sometimes very much reduced. Basal area of both wings beneath spotted with red, varying in extent. Thorax, base of abdomen, shoulder-covers and tegulae red. Abdomen ringed with white. Head and collar black spotted and lined with white. Palpi and pectus white, the pectus edged with black interiorly. Legs striped with white. Fringes of primaries black, of secondaries white.

Capt. Riley has sent to the writer for determination, a rather small specimen which bears the label "Guyane;" this individual

has the red basal area of the wings on both sides, reduced to a very few scattered scales, the shoulder-covers are worn but still contain a few red scales, as do the tegulæ at the base. The three subapical spots are present but very small. The genitalia of this specimen does not differ in form from that of typical individuals.

The uncus terminates in two rather blunt arms; the flanges arising from the base extend slightly beyond the apex of the uncus and broaden just before the pointed tip. The girdle is rather long. The ædæagus is bulbous at the base, then very slender. The terminal arm of the elaspers ends in a broad irregular lobe, followed by a stout projection at the base and with numerous serrations on the dorsal edge. The inner plate of the disc has a broad upward projection at about the center and a number of serrations on the dorsal edge.

Distribution. Type locality: not given. Ecuador, Bolivia (B). Pebas, East Peru (B.M.).

Y. staudingeri form cometides.

Mabille and Boullet, Ann. des Sciences Nat., Paris, 9th series, pp. 186, 187, 1908.

Draudt, Seitz Macrolep. of the World, vol. 5, p. 842, pl. 164 b, 1921.

The description states that this form differs from *staudingeri* in the absence of the subapical spots.

A specimen loaned the writer by the Academy of Natural Sciences, Philadelphia, Pa., is somewhat smaller than typical individuals, the subapical spots are entirely lacking and the red basal area of the wings both above and beneath is very much reduced. The form of the genitalia is identically the same as in typical specimens.

Distribution. Type locality: Bolivia. Rio Songo, Bolivia (A.S.).

Y. thelersa (Fig. 10).

Hewitson, Trans. Ent. Soc. London, 3rd series, vol. 2, p. 481, 1866.

Watson, Proc. Zool. Soc. London, (1), p. 13, 1893 (as synonym of *cometes* Cramer).

Mabille and Boulet, Ann. des Sciences Nat., Paris, 9th series, p. 187, 1908 (as synonym of *cometes* Cramer).

Draudt, Seitz Macrolep. of the World, vol. 5, p. 842, 1921 (as synonym of *cometes* Cramer).

blossomiæ Williams, Trans. Amer. Ent. Soc., vol. lvii, pp. 288, 290, pl. xxv, fig. 4, 1931.

Although the description does not give the color of the fringes of the secondaries it does state that they are not white. Capt. Riley informs the writer that Hewitson's type in the British Museum Collection has black fringes and that they have other similarly colored specimens of both sexes. There are two specimens in the writer's collection, a male and a female, the male having a very minute dot in interspace 7, and the female small spots in interspaces 6, 7, 8 and 9 not mentioned in the original description, but as the subapical spots in this group show considerable variation, their presence in the two specimens mentioned does not seem to be of importance.

The superficial appearance of *thelersa* is very much like that of *staudingeri*, differing in the black fringes of the secondaries and the outer margin of those wings being a little more excavate in the males. The female has broader and more rounded wings. The form of the male genitalia, though similar to that of *staudingeri*, differs in detail.

Blossomiæ Williams, from Ecuador, appears to be the same as *thelersa*.

Distribution. Type locality: "Amazon (St. Paulo). Montes Aurcos, Maranhao, North Brazil; Amazons, Brazil; Rio Colorado, 2,000 feet, Peru; French Guiana; Rio Napo, Ecuador; St. Paulo (probably Sao Paulo de Olivenca, Upper Amazon), Brazil (B.M.). Iquitos, Peru (B).

Y. *timæus* (Fig. 11).

Bell, The Entomologist, vol. lxiv, p. 236, 1931.

Wings black with a blue sheen. Primaries with a transverse band of three white hyaline spots and two minute subapical spots of the same color. Base of both wings above red haired, not extending above the cell of the secondaries; beneath, the red hairing is much reduced. A slight projection in the outer

margin of the secondaries from vein 1 b to 2. Fringes of primaries black; of secondaries white. Thorax above and beneath covered with red hairs. Abdomen above and beneath red haired at the base, each ring banded with white. Fore and middle legs striped with white, the middle legs fringed with red hairs. Hind legs missing. Head black with white spots and lines. Palpi white, with a black tip. Pectus white, narrowly edged with black in the center. Collar black with a white line. Shoulder-covers and tegulae red. Anal tuft blackish.

The uncus is bifid, the basal flanges are narrow at their base and widen into a broad blade which ends in a point. The girdle is long and the saccus rather short. The right clasper terminates in a short arm with an upturned, rounded, serrate apex, back of which rises a stout projection with a few serrations. The inner plate of the disc is extended forward in a long, narrow projection which nearly reaches the outer edge of the apex of the terminal arm, the dorsal edge carries some strong serrations near its center and there are numerous fine ones at and near the tip of the long projection. The left clasper terminates in a similar manner, but from the side of the long projecting part of the inner plate of the disc there arises two stout, smooth projections which extend well above the dorsal edge of the terminal arm.

This species resembles *cometes* Cramer and *staudingeri* Plotz, differing from the first in the color of the head, and from the second in the extensive red hairing of the thorax beneath and the red fringe of the middle legs.

Distribution. Type locality: Pebas, East Peru. (B.M.), (B).

Y. rubricollis (Fig. 12).

Sepp, Surinam Vlind, vol. I, pl. 36, 1848. (Text on unnumbered page).

Watson, Proc. Zool. Soc. London, (I), p. 13, 1893.

Mabille and Boullet, Ann. des Sciences Nat., Paris, 9th series, p. 187, 1908.

Draudt, Seitz Macrolep. of the World, vol. 5, p. 842, pl. 164 c, 1921.

hadora Hewitson, Trans. Ent. Soc. London, 3rd series, vol. 2, p. 482, 1866. Exot. Butt., vol. 4, Pyrrh. pl. 3, fig. 23, 1871.

Mabille and Boullet, Ann. des Sciences Nat., Paris, 9th series, p. 187, 1908.

Draudt, Seitz Macrolep. of the World, vol. 5, p. 842, pl. 164 c, 1921.

Sepp's figure shows a black head, with lines of white; red shoulder-covers and collar; white fringes of the secondaries; white palpi and pectus; blackish anal tuft. Hewitson's figure of *hadora* differs in having the head red with a black line from eye to eye; however, Capt. Riley has informed the writer that the Hewitson type of *hadora* in the British Museum Collection has a black head with white markings and is unquestionably the same species as *rubricollis*. It seems apparent that Hewitson did not figure his type of *hadora* but selected for the figure a specimen of another species. The figure of Draudt does not represent the true *hadora* as it shows a red head.

The uncus terminates in two well separated, rounded arms, the basal flanges absent. The scaphium well developed and shagreened. The girdle slender. The ædœagus short and slender. The claspers are short, broad and asymmetrical, the right one terminating in a broad upward flange, blunt and serrate at the tip, back of which is a stout upward projection; the left one terminates in a broad upward flange rounded at the apex, with numerous fine serrations, from the inner side of the terminal arm is another rounded, serrate flange directed obliquely outward, from the base of which arises a strong upward projection, extending well above the dorsal edge of the clasper. The disc of the claspers carries a long narrow plate on the inner side, which extends backward beyond the base and forward beyond the apex of the terminal arm; on the right clasper this plate carries a number of serrations at the apex; on the left clasper there are but two strong teeth at the apex.

Distribution. Type locality: Surinam. Of *hadora*, "Amazon (Para and Ega)." S. Paulo, Upper Amazon. (B.M.).

Y. parima (Fig. 13).

Plotz, Stett. Ent. Zeit., vol. xlvii, p. 116, 1886.

Godman, Ann. and Mag. Nat. History, series 7, vol. xx, p. 155, 1907.

Mabille and Boulet, Ann. des Sciences Nat., Paris, 9th series, pp. 187, 188, pl. 13, fig. 3, 1908.

Draudt, Seitz Macrolep. of the World, vol. 5, p. 842, pl. 164 d, 1921.

The single male specimen at hand has black wings with a little metallic sheen. The primaries are crossed diagonally near the base by an orange band, broader at the inner margin than at the costal, and a transverse series of three white hyaline spots, the lower one narrow and tapering to a sharp point on vein 1; four subapical spots slightly curved inward toward the costal margin; a spot in each of interspaces 3 and 4. The secondaries have an elongate orange spot in the basal half, not reaching the base of the wing, extending from above the costal vein to the abdominal fold. The secondaries have a well developed tooth at the anal angle and another one above it. Beneath, the orange band of the primaries is much paler in color; the secondaries have a narrow, oblique orange band near the base. Fringes of the primaries black; of the secondaries white between the teeth, the rest black. Head brown, lined and spotted with white. Collar brown lined with white. Shoulder-covers orange. Tegulae orange narrowly edged with brown below. Palpi white narrowly edged with brown internally. Pectus white. The upper side of the thorax is too badly rubbed to be sure of the color but there are still some orange scales near the base of the wings, beneath it is brown with tufts of white hair at the base of the legs. Abdomen brown above, the segments edged with white beneath. Anal tuft brown.

Distribution. Type locality: Surinam.

As previously stated it seems doubtful that *parima* belongs in this genus, the superficial appearance is different from the type and the form of the genitalia is very much like that of the *Myscelus* species.

Y. leander.

Boulet, Bull. Soc. Ent. France, p. 92, 1912.

The description states that this species resembles *parima* Plotz, being a little larger, primaries with two white hyaline fascia and reddish-yellow at the base. Secondaries scarlet at the base, and a similarly colored geminate spot between veins 1 and 2.

Fringes, palpi and fore legs white. The abdomen ventrally, feebly annulated with white. Differing from *parima* in the apical band, which is composed of very small spots, and the basal band of the secondaries, which, while narrow, is broader than in *parima*. The description does not give the color of the head but it is assumed that it is the same as in *parima*.

Distribution. Type locality: Muzo, Colombia, 800 meters (A. H. Fassl).

This species from its apparent affiliation with *parima* probably does not belong in the genus *Yunguna*.

c. Pectus red.

Y. **tetricus** (Fig. 14).

Bell, The Entomologist, vol. lxiv, pp. 235, 236, 1931.

Wings black with a green sheen. Primaries with a transverse band of three white hyaline spots, slightly sinuous; a small, elongate, white hyaline spot in the cell-end, slanting obliquely inward; four small, white hyaline subapical spots. Secondaries somewhat concave between veins 1 b and 6. Fringes nearly worn off but appear to have been black on the primaries and white on the secondaries. Thorax beneath with some red hairs in the center. Abdomen blackish above, the rings edged with greenish-grey, beneath grey. Head black with white lines and spots. Collar black. Shoulder-covers black with a few red hairs at the tip. Tegulæ greenish-black, with a few red hairs on the lower part of the base and which extend under the base of the primaries. Palpi white. Pectus red. Anal tuft blackish.

The uncus is somewhat sinuous and but little cleft at the apex. The basal flanges narrow and bent downward. The scaphium well developed and shagreened. The claspers terminate in a short, broad arm, somewhat rounded at the apex, the right one with a triangular, serrate, dorsal flange, back of which is a broad flange obliquely directed inward, on the outer side below the triangular flange are numerous short teeth, the dorsal edge is serrate from the flange to the apex. The inner plate of the disc carries a small triangular flap with a few teeth. The left clasper has the dorsal, triangular flange somewhat more developed, and the serrations on it and the dorsal edge are heavier; from the

side of terminal arm, under the dorsal flange, arises another narrow flange. The inner plate of the disc is irregular on the dorsal edge and with numerous serrations, it also carries a number of teeth on the inner side, and at the base of the clasper extends considerably backward. The ædæagus is long, bulbous at the base, with a slight projection near the center.

This species is allied to *cometes* Cramer and *staudingeri* Plotz, from the first it differs in the color of the head, from the second in the red pectus, and from both of them in the lack of the red hairing at the base of the wings and in the cell-spot of the primaries.

Distribution. Type locality: "Roraima." (B.M.).

2. Head red.

a. Pectus red.

Y. *arinas*.

Cramer, Pap. Exot., vol. 2, pp. 6, 7, pl. 100, fig. D, 1779.

Fabricius, Spec. Ins., vol. 2, p. 134, 1781. (as *arinus*).

Watson, Proc. Zool. Soc. London, (I), p. 13, 1893.

Mabille and Boulet, Ann. des Sciences Nat., Paris, 9th series, pp. 187, 188, 1908.

Draudt, Seitz Macrolep. of the World, vol. 5, p. 842, pl. 164 c, 1921. (as *arinos*).

pedaia Hewitson, Trans. Ent. Soc. London, 3rd series, vol. 2, pp. 481, 482, 1866. Exot. Butt., vol. 4, Pyrrh. pl. 3, fig. 22, 1871.

Mabille and Boulet, Ann. des Sciences Nat., Paris, 9th series, p. 187, 1908.

Draudt, Seitz Macrolep. of the World, vol. 5, p. 842, pl. 164 c, 1921.

Front head, palpi, pectus and anal tuft red. Primaries with a transverse band of three white hyaline spots. Fringes of the secondaries white. There is nothing in the figure or the description of *pedaia* to separate it from *arinas* and Watson is followed here in placing it as a synonym. There is a form or race of *arinas* occurring in Peru which has a black pectus, and it was described by the writer as *temenos*, reference to this form will be found on subsequent pages of the present paper. The form of the male genitalia is identically the same in both forms.

Distribution. Type locality: Surinam. Of *pedaia*, "Amazon, Ega." French Guiana (B.M.).

Y. mopsus (Fig. 15).

Bell, The Entomologist, vol. lxiv, p. 233, 1931.

Wings blue-black, veins somewhat greenish. Primaries with a transverse band of four white hyaline spots, the upper one being a mere streak above the cell. Fringes of primaries black, of secondaries white from anal angle to vein 7. Head red with a black line at the rear. Collar, palpi, pectus and anal tuft red. Shoulder-covers and tegulæ blue-black.

The uncus terminates in a broad, curved, bifid apex; the basal flanges are broad at their origin and extend in a long arm beyond the apex of the uncus, and are serrate on their dorsal edge. The girdle is long, the saccus moderately so. The claspers terminate in a narrow arm with an upturned sharp pointed tip. On the dorsal side of the arm, near its base, there arises a stout upward projection, broad at its base and ending in a sharp apex, a little erose on the inner edge near the base. On the inner side of the disc is a long, broad plate extending backward a little beyond the base of the clasper, serrate on the dorsal edge and carrying numerous short teeth on the inner side. The ædæagus is rather short and has a small serrate flange near the apex.

Distribution. Type locality: Chanchamayo, Peru. (B.M.).

b. Pectus black.

Y. cometes.

Cramer, Pap. Exot., vol. 3, p. 60, pl. 227, fig. F, 1782.

Watson, Proc. Zool. Soc. London, (I), p. 13, 1893.

Mabille and Boulet, Ann. des Sciences Nat., Paris, 9th series, pp. 186, 187, 1908.

Draudt, Seitz Macrolep. of the World, vol. 5, p. 842, 1921.

Cramer's figure shows an insect with a red head and he confirms this in the text of the description; the rest of the figure resembles *staudingeri* Plotz, which has a black head spotted with white. Cramer states in his description that the "head, corslet and part of the wings near the joints" are dark orange and that

the wings beneath are as above. Cramer figures only the upper side of *cometes* (Fig. F), and Mabilie and Boulet have evidently mistaken Figure E on the same plate to represent the under side of *cometes*, whereas it really represents the under side of Cramer's *amyceus* and does not in any way refer to *cometes*. Draudt, in Seitz, has continued this error.

Thelersa Hewitson is usually placed as a synonym of *cometes*, but as the fringes of *cometes* are white on the secondaries, according to Cramer's figure, and in *thelersa* they are black, according to the type in the British Museum, and the fact that *cometes* has a red head and *thelersa* a black one, the synonymy does not seem justified and they are kept separate in this paper.

Distribution. Type locality: Surinam.

The writer has not seen a specimen of *cometes* and it may possibly not belong in this division having a black pectus, but Cramer's remark "Beneath the body and feet are blue-black" seems to indicate that such may be the case.

Y. arinas form temenos (Fig. 16).

Bell, The Entomologist, vol. lxiv, pp. 234, 235, 1931.

Wings greenish-black. Primaries with a transverse band of three white hyaline spots. Fringes of primaries above, black, intermixed with white from anal angle to vein 3, beneath the white sealing is more prominent and there is a fine white terminal line almost to the apex of the wing. Fringes of the secondaries white from the anal angle to vein 7. Head red, narrowly black at the rear. Collar, palpi and anal tuft red. Shoulder-covers and tegulae greenish-black. Pectus bluish-black.

This insect resembles *mopsus* in the shape of the hyaline band of the primaries. From typical *arinas* it differs in the bluish-black pectus and the partly white fringes of the primaries. It may be merely a form of *arinas* or a geographical race, the exact relationship being impossible to determine from a single specimen. The form of the genitalia is the same as that of *arinas*.

The apex of the uncus is bifid, the basal flanges are narrow, serrate on the dorsal edge and apex. The girdle moderately long. The claspers terminate in an obliquely upturned lobe, rounded

and serrate at the apex, at the base of the terminal arm rises an irregular serrate projection, and another shorter, rounded one. The ædœagus carries a serrate flange near the apex.

Distribution. Type locality: La Merced, Chanchamayo, Peru. (B.M.).

Y. crida.

Hewitson, Trans. Ent. Soc. London, p. 167, 1871. Exot.

Butt. vol. 4, Pyrrh. pl. 2, fig. 14, 1871.

Watson, Proc. Zool. Soc., London, (I), p. 13, 1893.

Godman and Salvin, Biol. Centr.-Amer., Rhopal., vol. 2, p. 259; vol. 3, pl. 74, fig. 3, 1893.

Mabille and Boulet, Ann. des Sciences Nat., Paris, 9th series, pp. 188, 189, 1908.

Draudt, Seitz Macrolep. of the World, vol. 5, p. 842, pl. 164 e, 1921.

Wings bluish-black. Primaries with a transverse band of three white hyaline spots, this band is long, narrow and obliquely crosses the wing from the upper edge of the cell almost to vein I above the anal angle. The fringes of the primaries are blackish and of the secondaries white. Head, collar, palpi and anal tuft red. Shoulder-covers, pectus and tegulæ blue-black. The female is similar, with more rounded wings and a little wider hyaline band of the primaries.

As previously noted, the remarks in the *Biologia* in regard to the genitalia of this species are transposed with those referring to *cosyra* Druce.

The genitalia, as figured by Godman and Salvin in the *Biologia*, resemble the form found in typical *Pyrrhopyge*. The uncus is bifid, terminating in two bluntly rounded arms, the basal flanges broad, roughly triangular and serrate on the outer edge. The terminal arm of the claspers is obliquely directed upward, terminating in a triangular apex, serrate on the outer edge; from the dorsal edge at the base of the arm rises a stout serrate projection with a broad base.

Distribution. Type locality: Nicaragua (Chontales). Santa Fe de Bogota; Nouvelle Grenada. (B.M.).

Y. creusæ (Fig. 17).

Bell, The Entomologist, vol. lxiv, pp. 233, 234, 1931.

Wings greenish-black. Primaries with a transverse band of three white hyaline spots, shorter and less oblique than in *crida*. Fringes of primaries black, of secondaries white between anal angle and vein 6 and a fine white marginal line between veins 6 and 7. Head red, narrowly black at the rear. Palpi and anal tuft red. Collar black. Shoulder-covers, tegulæ and pectus greenish-black.

This species resembles *arinas* Cramer but differs in having a black pectus; it also resembles the form *temenos* from which it differs in having entirely black fringes on the primaries and a slightly different shaped hyaline band of those wings.

The form of the male genitalia is similar to that of *crida* Hewitson, as figured by Godman and Salvin in the Biologia, and as in that species more nearly coincides with the typical group of *Pyrhopyge* than with the type of *Yanguna*. Superficially *creusæ* is readily separated from *crida* by the shorter and steeper hyaline band of the primaries.

The female is similar to the male, the wings more rounded and the hyaline band of the primaries a little broader.

Distribution. Type locality: Cayenne, French Guiana. (B.M.). St. Laurent, French Guiana. (B.).

Y. sarpedon (Fig. 18).

Bell, The Entomologist, vol. lxiv, p. 234, 1931.

Wings greenish-black. Primaries with a transverse band of three white hyaline spots. On the secondaries the outer half of the veins from 2 to 8 are paler greenish. The outer margin of the secondaries is slightly concave between veins 1 b and 6. Fringes of primaries blackish, of secondaries white from anal angle to a little above vein 6. Head red, narrowly black at the rear. Collar, palpi and anal tuft red. Shoulder-covers and tegulæ greenish-black. Pectus blue-black.

The uncus is bifid, the basal flanges very broad and partly shagreened. The claspers terminate in a short, broad arm with a stout upward projection on the dorsal side near the apex, curved outward, and serrate on the inner edge; at the base of the arm

are two projections from the dorsal edge, one long and serrate at the tip, the other short and irregularly rounded. The inner plate of the disc is serrate on part of the dorsal edge. The ædæagus has a serrate flange near the apex.

This species resembles *arinas* Cramer and *creusæ* Bell in the shape of the hyaline band of the primaries, differing from the first in the blue-black pectus, from the second in the red collar and less excavate outer margin of the secondaries.

Distribution: Type locality: "Pebas, Amazonas." (B.M.).

Mahotis

Watson, Proc. Zool. Soc. London, (I), p. 13, 1893.

Orthotype, *Tamyris nurscia* Swainson.

Genitalia. In *nurscia* the uncus is slightly curved downward and cleft, terminating in two sharp pointed arms. A short, smooth flange projects forward from the base on each side. The girdle is of moderate length and the saccus rather long. The ædæagus is short, bulbous toward the base and tapering to the apex. The claspers show some asymmetry in the termination, the right one terminating in a short, slightly upturned arm with quite heavy serrations on the dorsal edge; the left one in a broad, upturned, double pointed arm, with serrations between the points. At the base of the terminal arm of each clasper there rises a stout upward projection.

M. *nurscia* (Fig. 19).

Swainson, Zool. Illustr., vol. I, pl. 61, 1821.

Mabille and Boulet, Ann. des Sciences Nat., Paris, 9th series, pp. 188, 189, 1908.

Draudt, Seitz Macrolep. of the World, vol. 5, p. 842, pl. 164 d, 1921.

There is quite a little variation among individuals of this species, in some the bluish overscaling of the under side extends over the entire area between the discal band and the apex of the primaries, and the outer margin of the secondaries, obliterating the usual black border of the wings.

Distribution. Type locality not given. Peru (A.M.). Ecuador (B.).

(To be continued)